

CHAPTER 6

PERIODONTIC ASSISTANCE

PERIODONTICS

Periodontics is that branch of dentistry pertaining to the diagnosis and treatment of the supporting and surrounding tissues of the teeth and their substitutes. It also includes the implantation or transplantation of teeth and their substitutes. The goal of modern periodontal therapy is to preserve and maintain periodontal health, aesthetics, and function of natural dentition and implanted tooth replacements.

The supportive structures, collectively termed the *periodontium*, consist of the gingiva, periodontal ligaments, and alveolar bone. Diseases that damage the periodontium are called periodontal diseases.

To prepare for this chapter, review chapters 5, 6, and 8 of *Dental Technician*, Volume 1, NAVEDTRA 12572, and chapter 3 of this manual. In chapter 5, "Oral Pathology," we discuss pathology of the periodontium. In chapter 6, "Emergency Treatment of Oral Diseases and Injuries," we discuss diseases of the periodontal tissues. In chapter 8, "Nutrition and Diet," we discuss preventive dentistry and nutrition. In chapter 3, "Preventive Dentistry," we discuss oral hygiene and supragingival scaling. In this chapter, we will cover the functions and indications of periodontics.

FUNCTIONS

The treatment of periodontal diseases may encompass both the dental and medical professions. When the cause of a patient's periodontal disturbance is diagnosed as systemic (affecting the body as a whole), the patient should be referred to the medical facility for diagnosis and treatment of the medical condition.

The dental treatment of a periodontal patient may require coordinated treatment from other specialty areas. Often, patients needing periodontal treatment are referred from specialty areas where they were seeking treatment for other related dental problems. For example, the patient may need a prosthetic appliance to replace some missing teeth. However, the patient's periodontal condition may require periodontal treatment before the appliance can be

made. In evaluating and treating the patient's periodontal disease, the periodontist may decide to eliminate periodontal pockets surrounding some teeth and determine other teeth are nonrestorable. The patient is referred to the oral surgeon for removal of these nonrestorable teeth. The periodontist may determine that other periodontal problems can be alleviated by having a general dentist remove and replace faulty restorations. In some situations, the services of the orthodontist may be required to reposition malposed teeth.

Since periodontal disease affects the supportive structures of the teeth, the primary function of periodontal treatment is (a) to eliminate the inflammation and arrest the progress of the disease and (b) perform periodontal treatment. Several reasons to eliminate pockets are as follows:

- Food, bacterial accumulation, and infection can exist in pockets that form around the teeth.
- Conditions, such as loss of gingival covering, can lead to exposure of the root and caries can occur.
- Inflammatory changes in the gingiva may increase the susceptibility to necrotizing ulcerative gingivitis (NUG). **Note:** NUG is caused by bacteria usually in the presence of secondary factors such as stress, smoking, and or lack of rest.
- Inflammation from the pocket walls can cause bone loss.
- Discomfort can occur during mastication.

INDICATIONS AND CONTRAINDICATIONS

Most periodontal diseases are characterized by inflammation that initially affects the gingiva. Advancement of the inflammatory process, if not stopped, may proceed to cause damage to periodontal ligament tissue and alveolar bone. Inflammatory diseases confined to the gingiva are termed *gingivitis*, whereas those that cause damage in the deeper supporting structures are classified as *periodontitis*.

Early signs and symptoms of periodontal disease found in the interdental papilla and marginal gingiva include the following:

- Redness
- Tendency to bleed easily
- Evidence of exudate
- Sponginess
- Tenderness
- Slight swelling
- Probing depth of pockets

Periodontal treatment is indicated when a periodontal condition cannot be eliminated through preventive care, including prophylaxis, and improved oral hygiene and diet. Resorption of the alveolar bone and the periodontal tissues are also indications for treatment. If the progress of the disease is stopped, the teeth may have adequate support for retention. For successful periodontal treatment, a patient must be willing to accept treatment and follow the requirements necessary to maintain good oral hygiene.

Several situations contraindicate periodontal treatment. A patient in poor general health with a poor prognosis for successful treatment and healing is one example. Another would be a patient with an extensive infection within the periodontium and/or bone loss too extensive to provide support for the tooth following periodontal surgery. Periodontal treatment is definitely contraindicated if the patient has a negative attitude and unwillingness to cooperate in establishing and maintaining good oral hygiene and nutrition.

EXAMINATION, CHARTING, AND TREATMENT PLAN

The initial examination of the periodontal patient includes thoroughly reviewing the patient's medical/dental health history, dental treatment history, and radiographs; charting of periodontal probing depths, occlusion, and tooth mobility; and determining a treatment plan.

The review of the patient's medical-dental health history provides valuable information regarding the dental status of the patient, such as past dental treatment, the patient's oral hygiene habits, and attitude toward dental health. A current full series of periapical radiographs and vertical bite-wings are necessary for a thorough periodontal examination. Radiographs are extremely useful in the diagnosis and treatment of periodontal disease because of conditions

such as bone loss around the teeth, calculus, poor margins and overhangs on restorations, and open tooth contacts that are visible. In addition to radiographs, some dentists may take clinical photographs of their patient's mouth and in some cases, diagnostic study casts are made.

CHARTING

Your primary responsibility during the examination is to record the findings as the dentist dictates them. The results of the examination are recorded on a NAVMED 6600/2, Periodontal Chart. This two-sided form (figs. 6-1 and 6-2) provides a permanent record of the examination, diagnosis, and treatment plan for initiation of each new course of therapy for the treatment of periodontal disease.

The form is an anatomical chart that contains diagrams of the teeth with spaces for comments. It permits documentation of changes in the teeth, occlusal relations, soft tissue alterations, and information gained from radiographs. The findings related to the teeth that are charted include missing, unerupted, malpositioned, or replaced teeth, dental caries, open or poor contacts, defective or poor restorations, food impaction, pain on percussion, and plunger cusps. Findings of the periodontium include the gingival level on the tooth, areas of recession or clefts, gingival enlargement or craters, probing depths, frenum attachments, furcation invasion (disease extension between the roots of multirrooted teeth), bleeding and purulence points, tooth resection, and tooth mobility.

Instructions and symbols for charting are located in the left column on the front page. Charting notations for the front section are made in blue pencil, red pencil, and regular black pencil.

Use black ink on the following front sections: Place of examination, examiner, date, and patient identification section. Also record the reverse side information in black ink.

Pocket Depth

One of the most important findings in the periodontal examination are the probing depths of the gingival sulcus or periodontal pockets. The dentist determines these measurements using a periodontal probe calibrated in millimeters. The dentist inserts the periodontal probe into the gingival sulcus to the depth of the epithelial attachment. The distance between the attachment and the gingival margin is measured and

Personal data - Privacy Act of 1974

Figure 6-1.—NAVMED 6600/2 (Front page).

With the progression of periodontal disease, supporting bone structure that anchors the tooth in place may be destroyed. This will make the teeth

PERIODONTAL CHART

BACK SIDE - USE AS OPTIONAL WORKSHEET

| | | | |
|--|-----|------------|------|
| Patient's Name: _____ | | SSN: _____ | |
| Chief Complaint _____ | | | |
| Pertinent Med/Dent Hx: | Age | Sex | Race |
| | HT | WT | BP |
| Extraoral Findings: _____ | | | |
| Intraoral Findings: _____ | | | |
| Plaque Control: _____ | | | |
| Periodontal Findings: _____ | | | |
| Occlusion: _____ | | | |
| Radiographic Assessment: _____ | | | |
| Etiology/Contributing Factors: _____ | | | |
| Diagnosis: _____ | | | |
| Prognosis (1-5 years) (Circle one): Good Poor Hopeless | | | |
| Overall: _____ | | | |
| Individual: _____ | | | |
| Tentative Treatment Plan: _____ | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| <small>Permanently retain this form in the dental record. Enter all pertinent findings from above, i.e., on the back side, in the "S.O.A.P." entry on the SF 603/603A.</small> | | | |

U.S. GOVERNMENT PRINTING OFFICE: 1993-704-079/60287

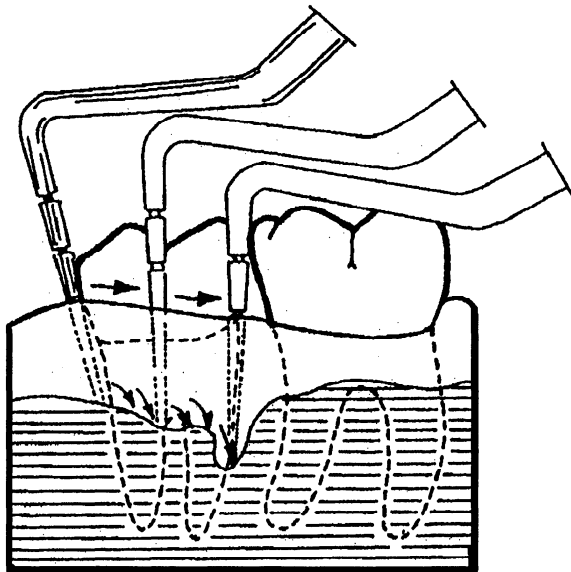
DTV2f602

Figure 6-2.—NAVMED 6600/2 (Back page).

become loose (mobile). The dentist tests each tooth for mobility by using the handles of two mirrors to push it in a facial-lingual direction and pressing on the occlusal or incisal surface. A scale of one to three (I, II, and III) is used to describe and record mobility.

- Class I—Slightly greater than normal

- Class II—Moderate mobility
(within 1mm of total movement)
- Class III—Extensive mobility
(greater than 1mm in all directions or depressible)



DTV2f603

Figure 6-3.—Walking the periodontal probe around the tooth.

TREATMENT PLAN

Once the front of the NAVMED 6600/2 is charted, the areas of the back of the form are completed by the dentist. The tentative treatment plan outlines the dentist's recommended treatment for the patient and the sequence in which it is done. The dentist must discuss the diagnosis, prognosis, and tentative treatment plan with the patient. It is up to the patient to accept or decline the recommended treatment. The examining dentist, facility, and dates are on the front page of the NAVMED 6600/2, which becomes a permanent part of the patient's dental record. After the examination is completed, appointments are arranged with the patient for treatment.

BASIC PERIODONTAL INSTRUMENTS

Several instruments are commonly used in periodontal treatment. Among them are probes, scalers, curettes, hoes, files, chisels, and knives. Although we have discussed some of these instruments in other specialties, the instruments discussed here are designed for periodontal use and are somewhat different. Some of the instruments are used for scaling and root planing, while others are used for periodontal surgery.

PERIODONTAL PROBES

The periodontal probe is one of the most important instruments used to make a diagnosis and accurately determine the presence, depth, and form of periodontal

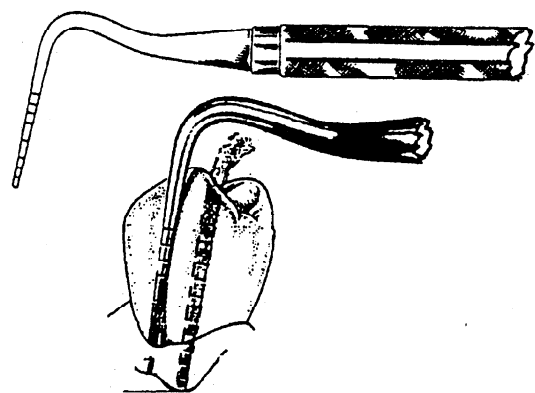
pockets. An angled shank places the working end at about a 45° angle in relation to the handle. The thin narrow working end is inserted gently to the depth of the periodontal pocket. Calculus may interfere with accurate probing. A periodontal probe is an elongated and tapered instrument that is scored at millimeter intervals on the working end. The scored markings make it easy to determine the depth of the pocket. The markings can range in increments from 1 to 10mm, depending on the type of the probe. Many different types of probes are used. Figure 6-4 illustrates a common periodontal probe

FURCATION PROBES

When periodontal disease causes sufficient loss of attachment around multirooted teeth, the interradicular bone (furcation area) may become involved. The presence of gingiva and neighboring teeth frequently prevent accurate probing of the furcation area with the standard periodontal probe. The furcation probe shown in figure 6-5 is a double-ended instrument designed to help determine the extent of the interradicular bone loss.

SCALING AND ROOT PLANING INSTRUMENTS

The term *scaling* is used to identify the removal of calculus (mineralized plaque) from the surface of a tooth. Scaling can be supragingival (performed by Dental Technicians) or subgingival (performed by a hygienist or a dentist), depending on the location of the



DTV2f604

Figure 6-4.—Periodontal probe.



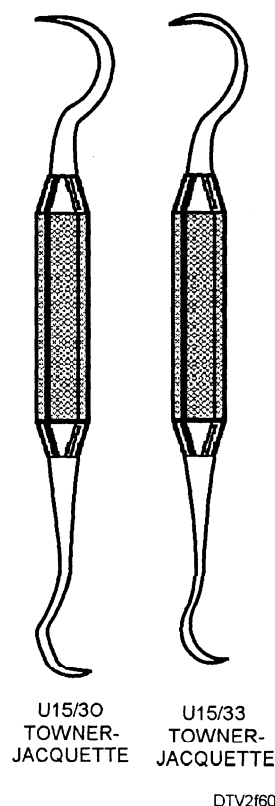
DTV2f605

Figure 6-5.—Furcation probe (double-ended).

calculus relative to the gingival margin. The objective of scaling is to remove calculus from the tooth surface. This is easy to accomplish when the calculus is located on the enamel of the tooth. Calculus attached to the root surface, however, is embedded in the surface irregularities and is much more difficult to remove. The dentist or hygienist will smooth out the irregularities and remove the calculus. As this is done, some root structure is removed. This is referred to as root planing. Several instruments have been designed for scaling and root planing. They include sickles, curettes, files, chisels, and hoes (illustrated in figure 6-6). We will discuss dental implant scaling instruments.

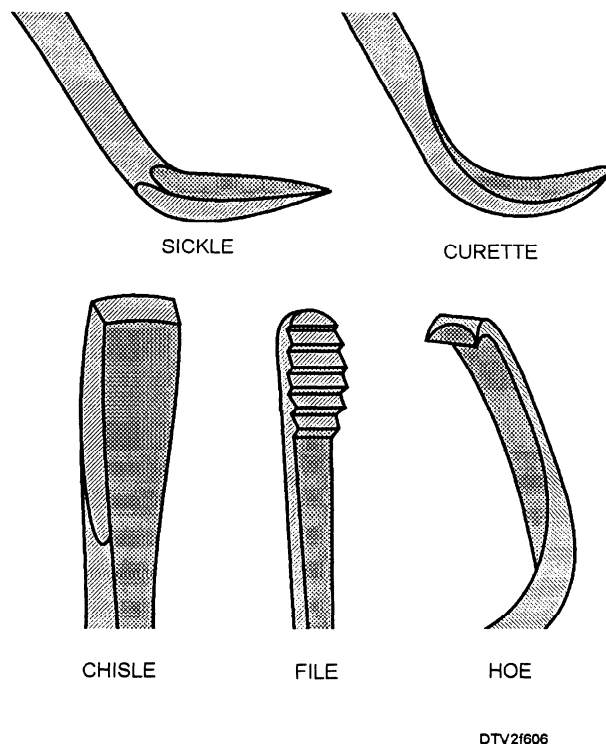
Sickle Scalers

A sickle scaler (fig. 6-7) is primarily designed for removal of supragingival calculus. Sickles with straight shanks are designed to adapt to anterior teeth, and those with contra-angled shanks (called Jacquesques) adapt to posterior teeth and are illustrated in figure 6-8. The basic characteristics of the sickle scaler are they are triangular in shape, have two cutting edges, and are pointed at the tip. The cutting edge is



DTV2f607

Figure 6-7.—Sickle scaler.



DTV2f606

Figure 6-6.—Scaling and root planing instruments.

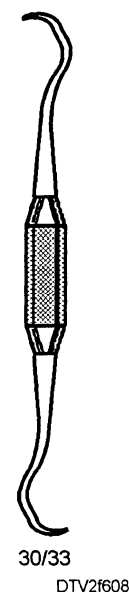


Figure 6-8.—Jacquesque double-ended scaler.

inserted under the ledge of calculus and used with a pull stroke.

Curettes

The curette is the instrument of choice for subgingival calculus removal, root planing, and removing soft tissue from the periodontal pocket. The

working ends of curettes form a spoon-shaped face and a rounded back. In a cross-section, the curette blade appears semicircular rather than triangular (shape of the sickle scaler). Two basic types of curettes are the universal and the area specific.

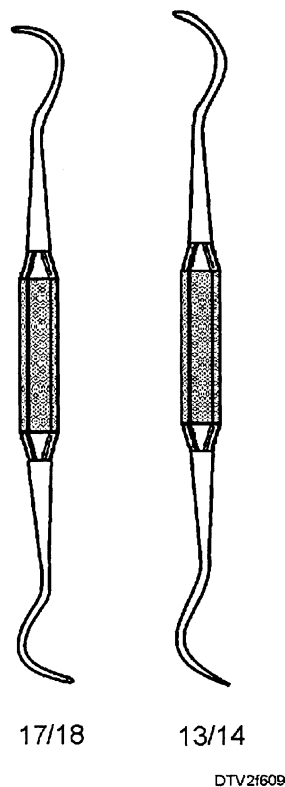


Figure 6-9.—McCalls curettes.

UNIVERSAL CURETTE.—The universal curette is a paired instrument designed to adapt to **most** areas of the dentition by altering and adapting the finger rest, fulcrum, and hand position. Two parallel cutting edges are formed, one on either side of the face. Either cutting edge can be used. Universal instruments come in a variety of sizes and shank lengths. Some commonly used instruments are the Columbia #13/14 and the McCalls #13/14 and #17/18. The Columbia #13/14 has a true universal application, whereas the McCalls has two cutting edges on each blade that are better suited to certain areas of the mouth. The McCalls #13/14 are best suited for use on bicuspid and the #17/18 for molars (fig. 6-9).

AREA SPECIFIC.—Area specific curettes differ from the universal curettes in several ways. First, they are a set of several instruments designed and angled to adapt to a specific anatomic area of the dentition. Second, these curettes are designed with only one cutting edge. Area specific curettes are the best choice for subgingival scaling and root planing because they provide the best adaptation to the complex root anatomy.

The Gracey curettes are paired, area-specific instruments, that have similar blades with different angulations and contra-angulations of the shank. Figure 6-10 illustrates the complete set of double-ended Graceys. Next we will discuss where each Gracey is used on the tooth surface being scaled or root planed.

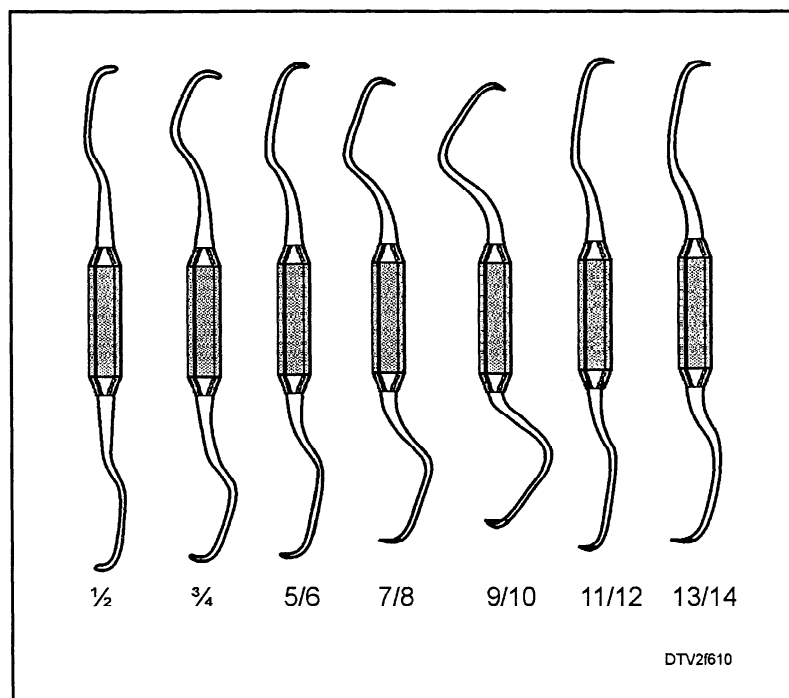


Figure 6-10.—Gracey area specific curette set.

- Gracey #1/2—Facial root surfaces of incisors and cuspids.
- Gracey #3/4—Lingual surfaces of anterior teeth.
- Gracey #5/6—All surfaces of anterior teeth and some bicuspid.
- Gracey #7/8 and #9/10—Facial and lingual surfaces of posterior teeth.
- Gracey #11/12—Mesial surfaces of posterior teeth and for furcations and depressions.
- Gracey #13/14—Distal surfaces of posterior teeth.

Files

Periodontal files are strong instruments used to crush large calculus deposits and to smooth the tooth surface at the cemento-enamel junction when the dentist is root planing.

Chisels

Use of the periodontal chisel scaler is extremely limited. It is used solely for the removal of heavy supragingival calculus deposits that bridge open interproximal spaces of anterior teeth.

Hoes

Periodontal hoe scalers are usually limited to removal of large ledges of calculus located supragingivally and slightly subgingivally. For example, calculus that rings the tooth on the facial, lingual, and distal surfaces of teeth that have no adjacent posterior teeth can be removed with the hoe.

Dental Implant Scaling Instruments

Special scalers made of plastic or nonmetallic material are designed for cleaning the abutments of dental implants. The special material enables optimum cleaning without damaging the abutment surface. **Never** use metal scalers and curettes, including some and or ultrasonic tips, because they may damage the smooth surface of the implant.

Several versions of implant scales are available to permit access in all situations. We will discuss where on the tooth the implant scalers (fig. 6-11) are used.

- Universal scaler—Can be used in most areas to clean the abutment surfaces and apical portion of the framework.

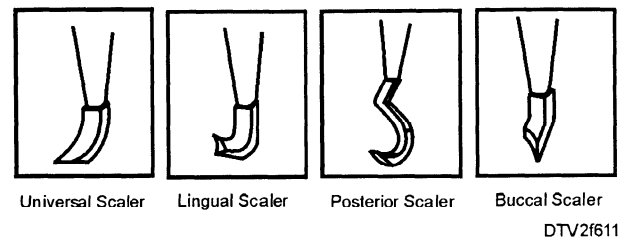


Figure 6-11.—Plastic or nonmetallic scaling instruments.

- Lingual scaler—Designed for cleaning the lingual side of the abutment.
- Posterior scaler—Designed to enable access to the posterior lingual abutment surfaces.
- Buccal scaler—Cleans the buccal surface of the abutment.

PERIODONTAL SURGERY INSTRUMENTS

To be an effective and efficient dental assistant, you must be familiar with the instruments the dentist may use during surgery. Some of the most commonly used periodontal surgery instruments are periosteal elevators, periodontal knives, periodontal surgery curettes and sickles, and periodontal surgery chisels, hoes, and files.

PERIOSTEAL ELEVATORS

The periodontal periosteal elevator illustrated in figure 6-12 is very similar in shape to the prosthetic laboratory wax spatulas. It is designed with one end that is rounded and the other pointed for delicate tissue retraction.

PERIODONTAL KNIVES

Periodontal knives (fig. 6-13) may be double- or single-ended in paired sets. The knives have a slightly angled, crescent-shaped blade. Many different types of knives are designed to make initial incisions for gingivectomy and gingivoplasty procedures. Other knives are used to excise (complete the removal of) the interproximal tissue in gingivectomy and gingivoplasty procedures.

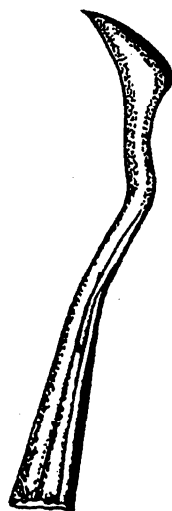
PERIODONTAL SURGERY CURETTES AND SICKLES

These instruments are larger and heavier curettes and sickles than those used in scalings and are often needed during periodontal surgery. They are designed



DTV2f612

Figure 6-12.—Periodontal periosteal elevator.



DTV2f613

Figure 6-13.—Periodontal knife.

to remove granulation, fibrous tissue, and hard-to-remove subgingival calculus deposits.

PERIODONTAL SURGERY CHISELS, HOES, AND FILES

Because of bone loss accompanied in some cases of periodontal disease, it may be necessary for the

periodontist to recontour the bone during periodontal surgery. In such cases, the dentist may use periodontal surgery chisels, hoes, and files. They are also larger and heavier than those used in scaling and root planing.

ELECTROSURGERY APPARATUS

Electrosurgery equipment uses a high-frequency electric current to cut tissue. The electrode attachment used will depend on the extent of the tissue removal required. One advantage of using the electrosurgery is coagulation and the control of bleeding.

ROUTINE PERIODONTAL PROCEDURES

Treatment of periodontal disease and occlusal trauma may include several nonsurgical procedures, such as equilibration, periodontal scaling, scaling and root planing, and root desensitization. Gingival curettage, which is considered a periodontal surgery procedure, is commonly performed in conjunction with scaling and root planing.

OCCLUSAL EQUILIBRATION

Occlusal interferences and oral habits, such as bruxism and clenching, can cause the mandible to shift out of its normal position when the maxillary and mandibular teeth occlude. This chronic shifting of the mandible during oral functions is traumatic to the joint, and may cause muscle spasms, and hypersensitivity and hypermobility of teeth. The elimination of occlusal interferences and establishment of favorable occlusal forces on the teeth is called *occlusal equilibration*. The two types (limited or complete) are discussed below.

Limited Occlusal Adjustment

Limited occlusal adjustment involves reshaping the occlusal or incisal surfaces of the teeth by grinding to improve inter-arch tooth contact relationships. This type of adjustment is limited to one or more selective teeth being reshaped.

Complete Occlusal Adjustment

Complete occlusal adjustment involves reshaping the occlusal and or incisal surfaces by grinding to achieve correct contact during functional movement (grinding side- to-side and sliding the jaw forward). A complete adjustment involves all or nearly all of the teeth.

Materials and Procedures

You will need to prepare a tray with a mirror, explorer, periodontal probe, cotton forceps, articulating paper forceps, various rotary stones, rubber wheels and points, high-speed handpiece, articulating paper, occlusal waxes, and gauze sponges. An occlusal equilibration may require that a study cast be made to determine where the occlusion must be adjusted. During the procedure, the dentist uses articulating paper or occlusal wax on the patient's teeth for an accurate registration of occlusal contacts. You will use the gauze sponges to wipe off marks and keep the teeth dry to assure the accuracy of marking. The dentist removes the occlusal interferences by selectively grinding the teeth with a diamond stone in the high speed handpiece. The occlusion is rechecked and the adjusted tooth surfaces are polished with abrasive rubber wheels or points.

PERIODONTAL SCALING, ROOT PLANING, AND GINGIVAL CURETTAGE

These three procedures are often performed by the dentist or hygienist in conjunction with one another to decrease periodontal inflammation. *Scaling* procedures performed independently involve the complete removal of supra- and sub-gingival calculus and bacterial debris with hand instruments or mechanical (ultrasonic) instrumentation. This procedure is usually done by sextants or quadrants of the patient's mouth.

Scaling and root planing performed together involve more extensive scaling procedures to remove subgingival calculus located in the periodontal pockets and smoothing of root surfaces. Scaling and root planing procedures usually are done by sextants or quadrants of the patient's mouth with local anesthetic.

Gingival curettage is the intentional removal of the soft tissue wall of a periodontal pocket done under local anesthesia.

ROOT DESENSITIZATION

Periodontal patients may experience root sensitivity when elimination of periodontal pockets exposes root surfaces. Root desensitization involves the application of agents or drugs to exposed root surfaces to reduce or eliminate dentinal sensitivity.

PERIODONTAL SURGERY PROCEDURES OF THE SOFT AND HARD TISSUES

Periodontal surgery procedures involving the soft tissue include gingivectomy, gingivoplasty, periodontal flap, and soft tissue graft procedures. Surgery of the hard tissue includes osseous surgery, metallic implants, root amputations, hemisections, and bicuspidization. Your responsibilities in periodontal surgery are similar to those of oral surgery. To properly carry out your duties, you must know which instruments and instrument packs the periodontist desires. You should have all instruments and supplies needed for the particular periodontal treatment set up before the arrival of the patient. A typical periodontal surgery tray is shown in figure 6-14.

GINGIVECTOMY

Gingivectomy is the surgical excision of the soft tissue wall of suprabony pockets (above the alveolar bone) to eliminate periodontal pockets. The procedure is limited to gingival pockets where a wide band of attached gingiva exists. This surgery results in gingival recession and may expose tooth roots. If a gingivectomy is indicated, the gingival tissue should first be cleared of acute infection. Gingivectomy may be performed with either a scalpel or periodontal knife.

GINGIVOPLASTY

This procedure involves the reshaping of gingival deformities to improve form and function. This technique is useful when gingival overgrowth or gingival craters exist. A gingivoplasty is done to remove excess tissue and recontour the gingiva. Gingivoplasty may be performed with a periodontal knife, a scalpel, or electrosurgery.

PERIODONTAL FLAPS

A *periodontal flap* is a technique used in an attempt to correct gingival defects. With the flap technique, a section of the gingiva and or mucosa is surgically separated from the underlying tissues. The roots are thoroughly planed and the gingiva is repositioned to correct a gingival defect and sutured into place.

PERIODONTAL SOFT TISSUE GRAFTS

A *soft tissue graft* involves the complete separation of tissue from the donor site and placement in another location to correct periodontal or mucogingival defects. You must exercise special care to avoid aspiration of the tissue graft with the suction equipment.

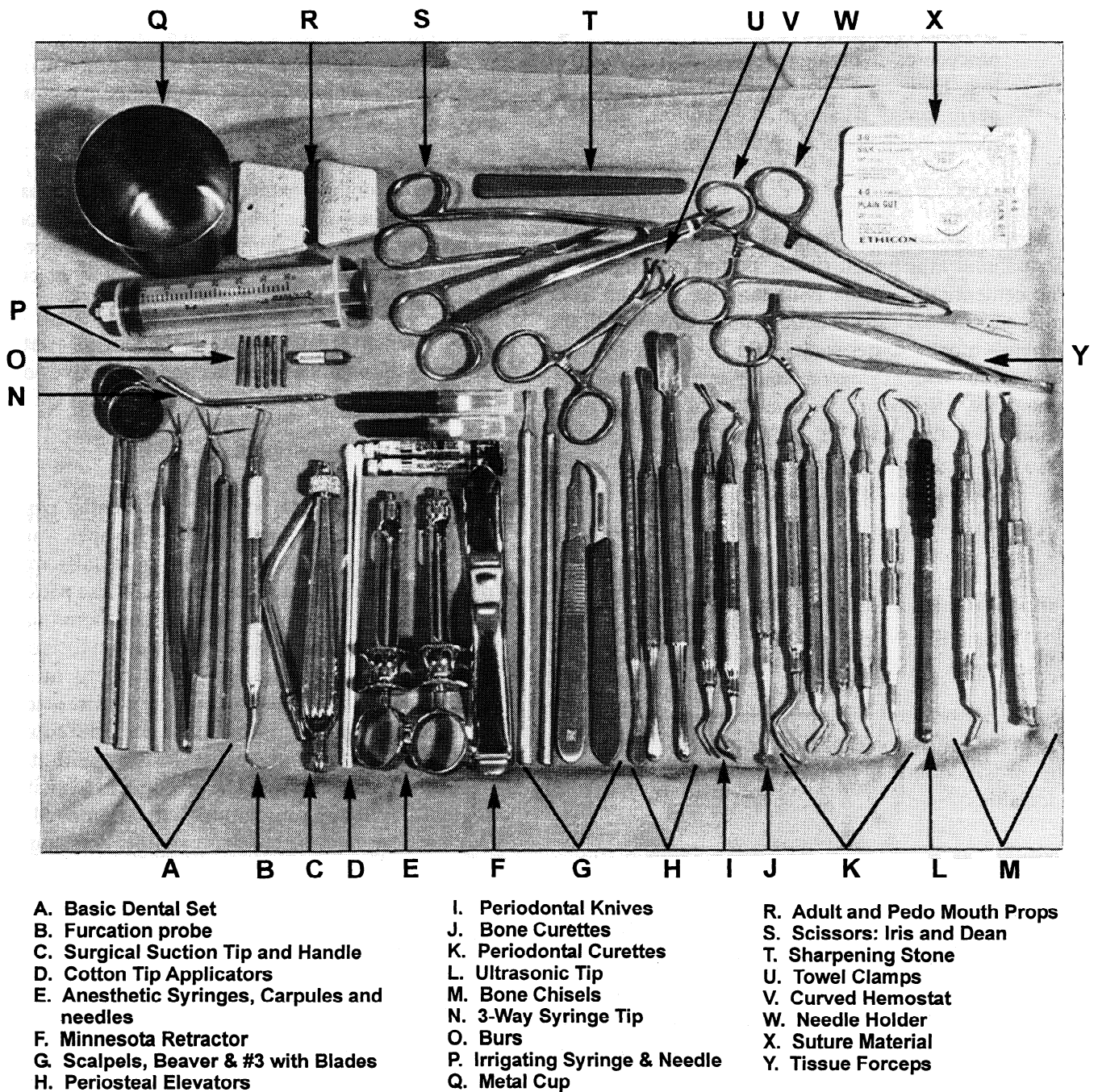


Figure 6-14.—Periodontal surgery tray.

OSSEOUS SURGERY

As inflammation proceeds into the deeper supporting tissues, the bone resorbs, creating defects or deformities. The most common deformities occur interproximally as saucer-shaped defects, known as

craters. Several surgical procedures are designed to treat these defects.

- Osteoplasty—Refers to reshaping the alveolar bone without removing tooth supporting bone.

- **Ostectomy**—Includes removal of tooth supporting bone in the treatment of periodontal disease.
- **Osseous reconstructive surgery**—This involves procedures involving regeneration (regrowth) of lost bone, and the reestablishment of the periodontal ligament, cementum, gingival fibers, and junctional epithelium.

An *osseous graft* is a procedure that involves implanting living tissue or inert material into periodontal osseous defects to regenerate new periodontal attachment (bone, periodontal ligament, and cementum). Donor bone may be obtained from adjacent cortical and cancellous bone, mixed with the patient's blood. Other sources for bone may be from edentulous ridges, extraction sites, or maxillary tuberosity. Bone can also be obtained from tissue banks or various crystalline synthetic substances, such as hydroxyapatite over a 4-6 month period. Grafts may also be placed in osseous defects.

METALLIC IMPLANTS

A method of tooth replacement involves the surgical implantation of coated metal implants into the bone ridges of edentulous areas (fig. 6-15). The root implant becomes firmly attached to the bone and a new crown is placed upon it to support fixed or removable bridges. The procedures involved in the use of metallic implants require a team approach from the prosthodontics, periodontic, and oral surgery specialties.

ROOT AMPUTATION, HEMISECTION, AND BICUSPIDIZATION

Sometimes the bone loss is so great around the root of a multirooted tooth that a root or section of the tooth

must be removed. The remaining portion of the tooth can be saved if sufficient periodontal support is present. Endodontic treatment is **required** before treatment of the remaining portion of the tooth.

- **Root amputation**—The complete removal of one or more roots of a multirooted tooth, without removal of any portion of the crown.
- **Hemisection**—The surgical sectioning of a multirooted tooth through the furcation area so that the blocked, defective, or periodontally involved root or roots may be removed along with the associated portion of the crown. An artificial crown is required on the remaining half of the crown.
- **Bicuspidization**—A multirooted tooth is sectioned through the furcation and both halves of the tooth are retained.

SURGICAL DRESSINGS

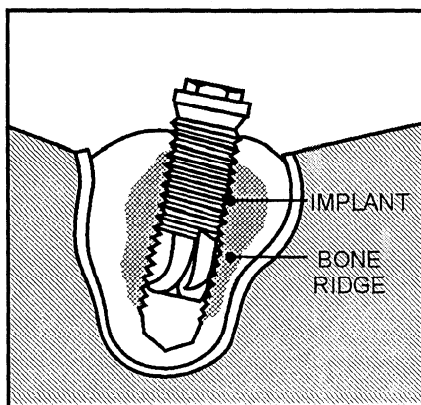
During periodontal surgery, the dentist exposes soft tissues and sometimes bone, leaving open wounds. Surgical dressing materials (packs) are usually applied to the wounds as a protective barrier. These packs not only protect the area by preventing food from injuring the surgical area, but also soothe and aid in the healing process. Your primary duty will be to mix the ingredients and form the dressing the dentist places in the patient's mouth. Follow the manufacturer's instructions for mixing. Most dressing will stay in place for 5-7 days. During the postoperative visit, the surgical dressing and any sutures will be removed. The dental officer may elect to place another dressing over the surgical area if the healing process is delayed.

INSTRUMENT SHARPENING

Periodontal cutting instruments must be kept sharp by a correct sharpening technique. To be able to recognize when instruments require sharpening is extremely important. To determine if an instrument is sharp, you must be familiar with each instrument's cutting edge(s). Under good lighting, examine the cutting edge using a magnifying glass, or by looking directly at the edge while slightly turning the instrument. A sharp cutting edge will not reflect light and appears as a line. A dull edge will reflect the light, creating a glare because the edge has been rounded off.

SHARPENING DEVICES

The correct sharpening device is critical for a good cutting edge. Hard felt wheels are recommended for



DTV2f615

Figure 6-15.—Implant placement.

periodontal knives. Sharpening stones are recommended for curettes, chisels, and scalers.

Sharpening stones are available in various grits (textures) and designs to meet a particular need. The Ruby and Arkansas stones are the most commonly used. The Ruby stone is fairly coarse, cuts rapidly, and is used primarily for initial sharpening of very dull instruments. The Arkansas stone has a fine grit and is used to attain a sharp edge.

Depending on their design and method of use, sharpening stones are either mounted or unmounted. Some are mounted on mandrels for insertion into the dental handpiece, others are mounted in mechanical devices known as mechanical sharpeners. Unmounted stones may be rectangular, cylindrical, or have a special shape. These stones are often lubricated with water or oil to avoid clogging the stone's pores with metal particles as the instrument is ground.

Regardless of the device used, instruments are sharpened by grinding or polishing the surfaces that form the cutting edge. Instruments should be sharpened after every use. If the cutting edge has been markedly reduced because of sharpening, discard the instrument rather than risking the chance of breaking it during a treatment procedure. Keep in mind that the amount of metal ground away by mounted stones is much greater than that removed by unmounted stones.

PERIODONTAL KNIFE SHARPENING

The most commonly used periodontal knives are the Kirkland #15 and #16, and the Orban #1 and #2. Both types may be sharpened with a hard felt wheel mounted on a dental lathe or handpiece. It is difficult to maintain the knife's functional shape and blade bevel with either technique.

Kirkland knives have three cutting edges to sharpen, the inner, outer, and back edge (figure 6-16). The Orban knives have only two cutting edges, the inner and outer edges (figure 6-17). Apply an abrasive, such as chrome rouge, to the felt wheel to aid in the sharpening process. Sharpen both sides of each edge. Use the following technique:

- Hold the knife handle between your thumbs and forefingers (both hands). Stabilize your hands or elbows on the work bench.
- Hold the knife so that the felt wheel rotates away from the cutting edge.



DTV2f616

Figure 6-16 .-Kirkland knife cutting edges: inner (1), outer (2), and back (3).



DTV2f617

Figure 6-17.—Orban knife cutting edges: inner (1) and outer (2).

- Place the knife against the wheel at an angle consistent with the bevel of the blade. Gently apply the knife to the wheel. Sharpen both sides of each cutting edge. Check each edge for sharpness.
- If using a stone, establish the same alignment as with the felt wheel, then draw the stone across the bevel of the blade.

PERIODONTAL CURETTE SHARPENING

Curettes are the most commonly used scaling instruments. McCall curettes (universal curettes) have two cutting edges and are sharpened on both sides. Gracey curettes are sharpened only on the outer curve.

Both have a rounded tip that must be maintained during sharpening (except the McCall #13/14).

When using a stationary stone, hold the curette in a modified pen grasp and establish a finger rest at the edge of the stone. Draw the side of the blade toward you. Because the curette is curved, you must repeat this process until the entire arc of the cutting edge is sharpened. Be sure to lubricate the stone during the sharpening procedure.

When sharpening a curette on a mounted stone, be sure the wheel rotates away from the side of the blade.

PERIODONTAL CHISEL SHARPENING

The No. 1 and No. 2 Ochsenshein chisels are the most commonly used periodontal chisels. They have three cutting edges, a flat edge on the tip and a curved edge on each side of the tip. The edges to be sharpened are up, toward you, on the convex side of the chisel head. The cutting edges on the No. 1 Ochsenshein are reversed. They are on the concave side of the head. Another commonly used chisel, the TGO chisel, is a smaller version of the Ochsenshein chisel. Follow these steps when sharpening a periodontal chisel:

- Use a flat Arkansas stone to sharpen the edge on the tip of the chisel. Position the blade on the stone at an angle conforming to the bevel of the blade. Push the blade across the stone in the direction of the cutting edge.
- Use a cylindrical sharpening stone or one with rounded edges to sharpen the curved edges on the sides of the chisel head. Position the stone on the blade at an angle consistent with the bevel of the blade. Twist or rotate the stone until the edge is sharp.
- DO NOT rotate the sharpening stone over the cutting edge, it will round and dull the edge.

SCALER SHARPENING

Sickle scalers and hoes are the most commonly used scaling instruments. Sickle scalers have two cutting edges that form a point where the facial and lateral surfaces meet (figure 6-18). Sharpen the sickle scaler by grinding the facial and lateral surfaces on a stationary stone being careful to maintain the sharp point.

To sharpen the facial surface, hold the edge flat against the side of the stone and draw the instrument back and forth.

To sharpen the lateral surface, position the surface against the stone and draw the instrument across the stone in the direction of the cutting edge. Repeat this procedure until both lateral surfaces are sharp.

A hoe scaler has only one edge. Sharpen the hoe by grinding only the outer surface of the cutting edge. The outer surface and inner blade surfaces form a 45° angle, so you must maintain this angle against the stone. Draw the instrument across the stone in the direction of the cutting edge. Repeat this procedure until the edge is sharp.

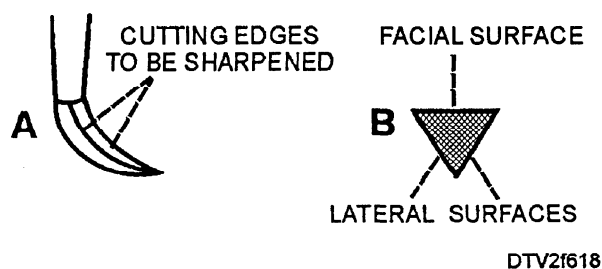


Figure 6-18.—Sickle scaler: A. Tip of sickle scaler; B. Cross section.